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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,954	10/23/2001	Geoffrey B. Rhoads	P0477	4464

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DIGIMARC CORPORATION
19801 SW 72ND AVENUE
SUITE 100
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EXAMINER

BLACKMAN, ANTHONY J

ART UNIT PAPER NUMBER

2676

DATE MAILED: 07/29/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/002,954

Applicant(s)

RHOADS ET AL.

Examiner

ANTHONY J BLACKMAN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18, 20-30, 37, 38 and 41-50 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

- 5) ☐ Claim(s) _____ is/are allowed.

- 6) ☒ Claim(s) 1-18, 20-30, 37, 38 and 41-50 is/are rejected.

- 7) ☐ Claim(s) _____ is/are objected to.

- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.

- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)

- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 10-11.

- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.

- 5) ☐ Notice of Informal Patent Application (PTO-152)

- 6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1-18, 20-30, 37-38 and 41-50 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1-16, 18 and 23-30, 37-38 and 41-50 are rejected under 35 U.S.C. 102(e) as being anticipated by NARAYANASWAMI et al, US Patent No. 6,504,571.
4. As per claim 1, NARAYANASWAMI et al disclose a method of compiling aerial imagery and generating a map (col 3 lines 6-50, col 4, lines 24-40 [at least inherent

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satellite imagery], col 8, lines 40-47, col 9, lines 33-40, col 10, lines 48-61, col 11, line 12-col 12, line 22 [at least inherent satellite imagery]) therefrom comprising the steps of: Digitally watermarking image data (fig 1, elements 100 and 134, fig 2 element 216, col 8, lines 6-21) to include imagery characteristics corresponding to the image data (abstract, lines 1-17, fig 2, elements 206, 208, 210, 212, 214, 216 and 218, fig 3, elements 300, 302, 304, 306, 308, 312, 314, 320, 336, 328, 332 350, 352, col 4, lines 7-41), the image data acquired by an aerial platform (col 3 lines 6-50, col 4, lines 24-40 [at least inherent satellite imagery], col 8, lines 40-47, col 9, lines 33-40, col 10, lines 48-61, col 11, line 12-col 12, line 22 [at least inherent satellite imagery]); correlating the Image data based on the imagery characteristics (abstract, lines 1-17, fig 2, elements 206, 208, 210, 212, 214, 216 and 218, fig 3, elements 300, 302, 304, 306, 308, 312, 314, 320, 336, 328, 332 350, 352, col 4, lines 7-41), the image data acquired by an aerial platform (col 3 lines 6-50, col 4, lines 24-40 [at least inherent satellite imagery], col 8, lines 40-47, col 9, lines 33-40, col 10, lines 48-61, col 11, line 12-col 12, line 22 [at least inherent satellite imagery]) and generating a map from the correlated image data map (figure 3, elements 322, 324, 326, column 3, lines 6-50, col. 1, line 58-col 2, line 6, 59-col 3, line 50, col 4, lines 7-12, 32-40, col 8, line 63-col 9, line 13, col 10, lines 6-34, col 11, line 45-col 12, lines 22, 66-col 13, lines 10 and 56-62).

5. As per claim 2, NARAYANASWAMI et al meet limitations of claim 1, including the following limitation wherein the imagery characteristics comprise at least one of scale, rotation, altitude, attitude, resolution, time, imaging device type, azimuth and skew (col 3, lines 55-65 applies to the at least underlined terms above).

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6. As per claim 3, NARAYANASWAMI et al meet limitations of claim 1, further comprising the steps of segmenting the image data into a plurality of patches (col 1, lines 15-27, col 2, lines 1-6, col 3, lines 6-13, 35-50, col 4, lines 2-40, col 9, lines 23-47, col 11, line 12-col 12, line 22), and wherein said digital watermarking step comprises embedding a watermark in each of the plurality of patches, the watermark including imagery characteristics for its respective patch (fig 1, elements 100 and 134, fig 2 element 216, col 8, lines 6-21).

7. As per claim 4, NARAYANASWAMI et al meet limitations of claim 3, including wherein said correlating step comprises adjusting image characteristics for at least one of the plurality of patches so that at least two adjacently positioned patches have similar imagery characteristics (abstract, lines 1-17, fig 2, elements 206, 208, 210, 212, 214, 216 and 218, fig 3, elements 300, 302, 304, 306, 308, 312, 314, 320, 336, 328, 332 350, 352, col 4, lines 7-41 and col 2, line 59-col 3, line 5, 22-50).

8. As per claim 5, NARAYANASWAMI et al meet limitations of claim 3, including wherein said generating step comprises the step of quilting the plurality of patches together to generate the map (fig 2, fig 3, col 2, lines 1-19, col 3, lines 6-50, col 4, lines 1-40, col 9-col 10, line 12).

9. As per claim 6, NARAYANASWAMI et al meet limitations of claim 1, in addition to the aerial platform comprises at least one of satellite, airplane, space shuttle, and unmanned aircraft (col 3 lines 6-50, col 4, lines 24-40 [at least inherent satellite imagery], col 8, lines 40-47, col 9, lines 33-40, col 10, lines 48-61, col 11, line 12-col 12, line 22 [at least inherent satellite imagery]).

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10. As per claim 7, NARAYANASWAMI et al disclose a method of managing aerial imagery (col 3 lines 6-50, col 4, lines 24-40 [at least inherent satellite imagery], col 8, lines 40-47, col 9, lines 33-40, col 10, lines 48-61, col 11, line 12-col 12, line 22 [at least inherent satellite imagery]) comprising the steps of: watermarking patches of aerial imagery (fig 1, elements 100 and 134, fig 2 element 216, col 8, lines 6-21), wherein each patch includes at least one watermark (fig 1, elements 100 and 134, fig 2 element 216, col 8, lines 6-21), the at least one watermark including an index (fig 2 and fig 3 [querying means inherently disclose indexing and databases]); storing in a database a plurality of data records corresponding to a range of watermark indexes (fig 1, elements 100 and 134, fig 2 element 216, col 8, lines 6-21), wherein the data records comprise imagery characteristics (fig 1, elements 100 and 134, fig 2 element 216, col 8, lines 6-21).

11. As per claim 8, NARAYANASWAMI et al meet limitations of claim 7, in addition to wherein said imagery characteristics comprise at least one of scale, rotation, altitude, resolution, time, imaging device type and skew ((col 3, lines 55-65 applies to the at least underlined terms above).

12. As per claim 9, NARAYANASWAMI et al disclose a method of generating a geo-spatial map (col 3, lines 6-50, col 4, lines 2-41 fig 2, fig 3) comprising the steps of: steganographically encoding data in the form of a digital watermark component in each of a plurality of image patches (col 3, lines 6-50, col 4, lines 2-41 fig 2, fig 3), said encoded data including a location indicator [indexing means and querying means

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directly correspond the encoded data including a location indicator and the parameter means]

(col 3, lines 6-50, col 4, lines 2-41 fig 2, fig 3); and piecing together the plurality of image patches based at least in part on the location indicator (col 3, lines 6-50, col 4, lines 2-41 fig 2, fig 3).

13. As per claim 10, NARAYANASWAMI et al meet limitations of claim 9, including wherein the location indicator identifies the geo-coordinates of its respective image patch (col 3, lines 6-50, col 4, lines 2-41 fig 2, fig 3), with each of the plurality of image patches including a unique location identifier representing unique geo-coordinates (col 3, lines 6-50, col 4, lines 2-41 fig 2, fig 3).

14. As per claim 11, NARAYANASWAMI et al meet limitations of claim 10, including wherein at least one of the location indicators identifies the geo-coordinates for at least one corner of its respective patch (col 3, lines 6-50, col 4, lines 2-41 fig 2, fig 3).

15. As per claim 12, NARAYANASWAMI et al meet limitations of claim 9, including wherein the location indicator identifies a respective patch location relative to the map (col 3, lines 6-50, col 4, lines 2-41 fig 2, fig 3).

16. As per claim 13, NARAYANASWAMI et al meet limitations of claim 9, including wherein the location indicator identifies the respective patch location within the geo-spatial map relative to at least one adjacent patch (col 3, lines 6-50, col 4, lines 2-41 fig 2, fig 3).

17. As per claim 14, NARAYANASWAMI et al meet limitations of claim 9, including wherein the location indicator comprises an index (col 3, lines 6-50, col 4, lines 2-41 fig

2, fig 3), and said method further comprises the step of indexing a database with the index to retrieve location information (col 3, lines 6-50, col 4, lines 2-41 fig 2, fig 3).

18. As per claim 15, NARAYANASWAMI et al disclose a method of correlating imagery data (column 3, lines 6-50, column 4, lines 24-40 [at least inherent satellite imagery], column 8, lines 40-47, column 9, lines 33-40, column 10, lines 48-61, column 11, line 12-column 12, line 22 [at least inherent satellite imagery]) generated under a plurality of different conditions (column 3, lines 6-50, column 4, lines 24-40 [at least inherent satellite imagery], column 8, lines 40-47, column 9, lines 33-40, column 10, lines 48-61, column 11, line 12-column 12, line 22 [at least inherent satellite imagery]), said method comprising the step of: embedding imagery characteristics in the imagery data (fig 1, elements 100 and 134, col 8, lines 6-21, it is inherent that the watermarking means bears similar results to embedding means); and modifying the imagery data based on the embedded imagery characteristics so as to standardize at least some of the imagery data (col 4, lines 2-6, 19-23, 24-31, col 8, lines 6-21 [wherein at least verifying the authenticity of the pictures inherently bears similar results to the standardization means]).

19. As per claim 16, NARAYANASWAMI et al meet limitations of claim 15, including wherein said conditions comprise at least one of aerial platforms, altitude, time, cloud cover, resolution and scale (for the at least the above underlined features see col 3, line 55-65).

20. As per claim 18, NARAYANASWAMI et al meet limitations of claim 15, including wherein said imagery characteristics comprise an index which is used to identify at least

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one of scale, rotation, altitude, attitude, resolution, time, imaging device type and skew (for the at least the above underlined features see col 3, line 55-65).

21. As per claim 23, NARAYANASWAMI et al disclose a method of marking a photograph (fig 1, elements 100 and 134, fig 2 element 216, col 3, lines 6-50, col 8, lines 6-21) comprising the steps of: obtaining geovector information corresponding to a location depicted in the photograph (fig 1, elements 100 and 134, fig 2 element 216, col 3, lines 6-50, col 8, lines 6-21); and digitally watermarking the geovector information in the photograph (fig 1, elements 100 and 134, fig 2 element 216, col 3, lines 6-50, col 8, lines 6-21).

22. As per claim 24, NARAYANASWAMI et al meet limitations of claim 23, in addition to geovector information comprises at least longitude and latitude coordinates (col 3, line 55-65).

23. As per claim 25, NARAYANASWAMI et al meet limitations of claim 24, including wherein said geovector information further comprises at least height, time, cardinal direction, and azimuth (col 3, line 6-50, 55-65).

24. As per claim 26, NARAYANASWAMI et al meet limitations of claim 23, including wherein said geovector information comprises a pointer (col 6, liners 49-54, col 8, lines 6-21).

25. As per claim 27, NARAYANASWAMI et al meet limitations of claim 26, including further comprising the steps of storing geovector information in a database and

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accessing the geovector information via the pointer [header] (col 6, liners 49-54, col 8, lines 6-21).

26. As per claim 28, NARAYANASWAMI et al meet limitations of claim 23, including wherein said geovector information is obtained from a GPS receiver (fig 1, element 114)

27. As per claim 29, NARAYANASWAMI et al meet limitations of claim 23, including wherein said geovector information is obtained after the photograph is taken (col 8, lines 6-21).

28. As per claim 30, NARAYANASWAMI et al meet limitations of claim 23, further comprising the step of accessing a database to obtain information regarding the area depicted in the photograph (col 8, lines 6-21).

29. As per claim 37, NARAYANASWAMI et al disclose an article of manufacture comprising steganographically embedded data (col 3, lines 6-50, col 4, lines 2-41 fig 2, fig 3) therein, the data including location information comprising information corresponding to longitude, latitude, time, azimuth, cardinal direction and height (col 3, line 6-50, 55-65).

30. As per claim 38, NARAYANASWAMI et al meet limitations of claim 37, including wherein the article comprises an image captured from an aerial platform (col 3 lines 6-50, col 4, lines 24-40 [at least inherent satellite imagery], col 8, lines 40-47, col 9, lines 33-40, col 10, lines 48-61, col 11, line 12-col 12, line 22 [at least inherent satellite imagery]), the aerial platform including an image capture sensor (col 8, lines 6-21), and wherein location information further comprises information corresponding to sensor geometry of the image capture sensor (col 7, lines 25-46, col 8, lines 6-21).

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31. As per claim 41, NARAYANASWAMI et al disclose a method of making a map (col 3, lines 6-50, col 4, lines 2-41) comprising the steps of: obtaining first geolocation information corresponding to at least a first region to be depicted by the map (col 7, lines 25-46, col 8, lines 6-21); and digitally watermarking the first geolocation information in the map (col 7, lines 25-46, col 8, lines 6-21), wherein said watermarking step comprises embedding the first geolocation information only in the first region (col 7, lines 25-46, col 8, lines 6-21).

32. As per claim 42, NARAYANASWAMI et al meet limitations of claim 41, including further comprising obtaining second geolocation information (col 7, lines 25-46, col 8, lines 6-21) corresponding to at least a second region to be depicted by the map and digitally watermarking the second geolocation information in the map (col 7, lines 25-46, col 8, lines 6-21).

33. As per claim 43, NARAYANASWAMI et al meet limitations of claim 42, including wherein said the second geolocation information is only embedded in the second region (col 7, lines 25-46, col 8, lines 6-21).

34. As per claim 44, NARAYANASWAMI et al meet limitations of claim 41, including wherein the first region comprises at least one of a fire hydrant, tree, road, building, lake, stream, forest, manhole, water line, gas line, power line, park, property line, fence, boarder, depot, geographical area, stadium, hospital, school, church, store and airport (col 7, lines 25-46, col 8, lines 6-21, col 3, lines 6-50, col 5, line 60-col 6 4, col 9, line 5-66, includes at least the underlined features above).

35. As per claim 45, NARAYANASWAMI et al disclose a method of making a map

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(col 2, lines 1-5, col 3, lines 6-50, col 4, lines 32-41) comprising the steps of: obtaining first geovector information corresponding to at least a first region to be depicted by the map (col 2, lines 1-5, col 3, lines 6-50, col 4, lines 32-41, col 7, lines 25-46, col 8, lines 6-21); and digitally watermarking the first geovector information in the map (col 7, lines 25-46, col 8, lines 6-21), wherein said watermarking step comprises digitally watermarking the first geovector information redundantly throughout the map (col 7, lines 25-46, col 8, lines 6-21).

36. As per claim 46, NARAYANASWAMI et al disclose a method of steganographically marking imagery captured from an aerial platform (col 3, lines 6-50, col 4, lines 2-41 fig 2, fig 3), said method comprising the steps of: obtaining first geolocation information corresponding to a first region depicted in the imagery captured from the aerial platform (col 7, lines 25-46, col 8, lines 6-21 and col 3, lines 6-50); and embedding the first geolocation in the imagery captured from the aerial platform in the form of a digital watermark (col 8, lines 6-21).

37. As per claim 47, NARAYANASWAMI et al meet limitations of claim 46, including, wherein the first geolocation information is embedded only in the first region (col 7, lines 25-46, col 8, lines 6-21).

38. As per claim 48, NARAYANASWAMI et al meet limitations of claim 46, and further comprising obtaining second geolocation information corresponding to at least a second region depicted in the imagery captured from the aerial platform and embedding the second geolocation information in the imagery captured from the aerial platform in the form of a digital watermark (col 7, lines 25-46, col 8, lines 6-21).

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39. As per claim 49, NARAYANASWAMI et al meet limitations of claim 48, including wherein the second geolocation is embedded only in the second region (col 7, lines 25-46, col 8, lines 6-21).

40. As per claim 50, NARAYANASWAMI et al meet limitations of claim 46, including wherein the first geolocation information is redundantly embedded in the imagery captured from the aerial platform (col 7, lines 25-46, col 8, lines 6-21).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

41. Claims 17 and 20-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over NARAYANASWAMI et al, US Patent No, 6,504,571 in view of REED et al, US Patent No. 6,590,996.

42. As per claim 17, NARAYASWAMI et al meet limitations of claim 15, including said imagery characteristics comprising at least one of scale rotation, altitude, attitude, resolution, time, imaging device type and skew (for the at least the above underlined features see col 3, line 55-65), however, does not expressly teach wherein said imagery characteristics affect a spatial domain representation of then imagery data. REED et al

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disclose wherein said imagery characteristics affect a spatial domain representation of then imagery data (col 9, lines 26-52 and col 37, line 62-col 38, line 9). It would have been obvious to one skilled in the art at the time of the invention to utilize the at least watermarking means utilizing spatial domain transformation that at least provides segmentation of the image in a block by block process of REED et al with the method for querying digital image archives including a watermarking means for each captured image of NARAYANASWAMI et al because both inventions share similar technological environments corresponding to at least watermarking image data.

43. As per claim 20, NARAYANASWAMI et al disclose a data structure stored on a computer readable medium (figs. 1-3), the data structure comprising an image captured from an aerial platform (column 3, lines 6-50, column 4, lines 24-40 [at least inherent satellite imagery], column 8, lines 40-47, column 9, lines 33-40, column 10, lines 48-61, column 11, line 12-column 12, line 22 [at least inherent satellite imagery])

the image including embedding data in the form of a digital watermark (fig 1, elements 100 and 134, fig 2 element 216, col 8, lines 6-21), said digital watermark including imagery characteristics (fig 1, elements 100 and 134, fig 2 element 216, col 8, lines 6-21), however, does not expressly teach wherein said imagery characteristics relate to a spatial domain representation of the aerial image. REED et al suggests said imagery characteristics relate to a spatial domain representation of the aerial image (col 9, lines 26-52 and col 37, line 62-col 38, line 9).

44. As per claim 21, NARAYANASWAMI et al as modified meet limitations of claim 20, including said imagery characteristics comprise an index which is to be used to

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identify at least one of scale, rotation, altitude, attitude, time, resolution, imaging device type, and skew (for the at least the above underlined features see col 3, line 55-65)

45. As per claim 22, NARAYANASWAMI et al as modified meet limitations of claim 20, including said imagery characteristics comprise at least one of scale, rotation, altitude, attitude, resolution, time, imaging device type, and skew (for the at least the above underlined features see col 3, line 55-65).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY J BLACKMAN whose telephone number is 703-305-0833. The examiner can normally be reached on FLEX SCHEDULE.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MATTHEW BELLA can be reached on 703-308-6829. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9314 for regular communications and 703-746-5731 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.



ANTHONY J BLACKMAN
Examiner
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A handwritten signature in black ink, reading "Matthew C. Bella". The signature is fluid and cursive, with the first name "Matthew" being more prominent and the last name "Bella" following in a similar style.

MATTHEW C. BELLA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600